



AFCTN Report

94-113

AFCTB-ID
94-111



Technical Raster Transfer Installation Drawing: Waveguide LPCR-130-2 Radar



Submitted By:
Lockheed Aeronautical Systems

Contract #F33657-90-C-0071-P00013BL2



Supporting:
WR-ALC/TILCA's EDCARS Program



MIL-STD-1840A
MIL-R-28002A (Raster)

Quick Short Test Report

15 August 1994

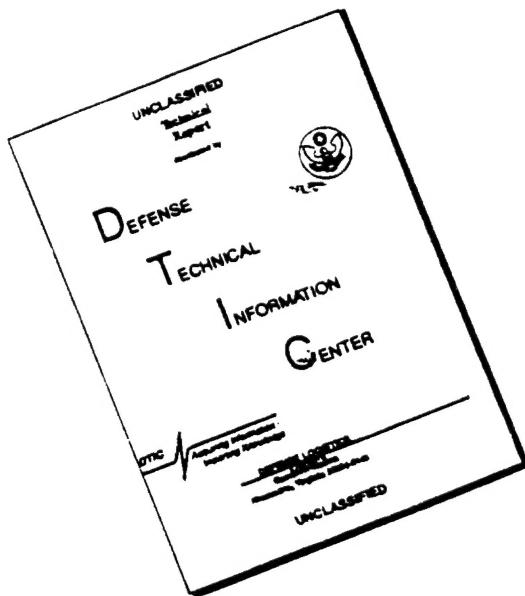


Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
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19960408 028

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**Technical Raster Transfer Installation Drawing:
Waveguide LPCR-130-2 Radar
Lockheed Aeronautical Systems' Data
Supporting:
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Contract #F33657-90-C-0071-P00013BL2**

**MIL-STD-1840A
MIL-R-28002A (Raster)**

Quick Short Test Report

15 August 1994

Prepared By
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Air Force CALS Test Bed

Notification of Test Results

15 August 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

Lockheed Aeronautical Systems

Identified as follows:

Title:	Installation Drawings: Waveguide, LPCR-130-2-Radar
Program:	EDCARS
Program Office:	WR-ALC/TILCA
Contract No.:	F33657-90-C-0071-P00013BL2
QSTR No.:	AFCTB-ID 94-111

Received on the following media: **9-Track Tapes**

The results of the QSTR evaluation are as follows:

MIL-STD-1840B Standard:	Pass
MIL-STD-1840B Media Format:	Pass
MIL-D-28000A IGES:	N/A
MIL-M-28001B SGML:	N/A
MIL-R-28002A Raster:	Pass
MIL-D-28003 CGM:	N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

Air Force CALS Test Bed
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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Lockheed Aeronautical Systems' interpretation and use of the CALS standards in transferring technical Raster data. Lockheed used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 94-111

Date of Evaluation: 15 August 1994

Evaluator:
George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator:
Darlene Bittaker
Lockheed Aeronautical Systems Company
D/73-34, Zone 0318
86 South Cobb Drive
Marietta GA 30063
(404) 494-4396

Data Description:
Technical Raster Test
29 Document Declaration files
80 Raster files

Data Source System:
1840
HARDWARE
SPARC System 630 MP
SOFTWARE
FORMTEK CALS Delivery Proprietary Software

Raster
HARDWARE
SPARC System 630 MP
SOFTWARE
FORMTEK CALS Delivery Proprietary Software

Evaluation Tools Used:

MIL-STD-1840A (TAPE)
SUN 3/280

AFCTN *Tapetool v1.2.10 UNIX*
XSoft *CAPS/CALS v40.4*

MIL-R-28002 (Raster)
HP 735

AFCTN *xrastb.hp*
Carberry *CADLeaf 3.1.2*
InterCAP *X-Change v7.82*
SUN SparcStation 2
AFCTN *validg4*
AFCTN *xrastb.sun4*
IGES Data Analysis (IDA) *CALSVIEW*
IDA *IGESVIEW v3.0*
IDA *IGESVIEW for Windows*

Standards

Tested: MIL-STD-1840A
MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. The tape reel did not contain a label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Some 9-track tape units require this BPI to be set manually. A packing list showing all files recorded on the tape was not enclosed.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN Tapetool v1.2.10 utility. No errors and one note was reported while evaluating the contents of the tape label. MIL-STD-1840A permits the use of both version three and four. The use of the most current standard should be used and noted.

An attempt was made to read the tape using XSoft's CAPS read1840A utility. This utility stopped after reading the first 20 Document Declaration files, because of design limitation in the software. No data files were read.

The media structure of the tape meets the requirements define in MIL-STD-1840A and ANSI 3.27.

3.2.2 Declaration and Header Fields

The tape contained 218 errors and 218 notes in the Document Declaration files and data file headers. All of the errors and notes were reported for the srcdocid and dstdocid records. The AFCTN Tapetool will report an error if there is more than one space after the colon for any record, per MIL-STD-1840A, para. 5.1.1.2. The data contained in these records is correct, with the space being a valid character. The reported errors are not valid MIL-STD-1840A errors.

```
srcdocid: 3338432      98897      LG 00020002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.
*** NOTE - Correction made in new Document Declaration Header File.
```

The CALS headers and Document Declaration files from the tape meet the CALS MIL-STD-1840A requirements.

4. Raster Analysis

The tape contained 80 Raster files. Due to the large number of files, only a sample of the files was evaluated. The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were evaluated using the AFCTN *validg4* utility. This program reported that all of the files sampled meet the CALS MIL-R-28002A specification.

The tape was constructed with 29 documents. Each document consisted of one to four Raster files which made up one drawing.

The files were read into the AFCTN *xrastb.sun4* viewing utility. No problems were noted.

The files were read into Carberry's *CADLeaf* software without a reported error. The images were displayed.

The files were read using IDA's *CALSView* without a reported error.

The files were read into IDA's *IGESView* and *IGESView for Windows* without a reported error and printed.

The files were read using InterCAP's *X-Change* without a reported error.

The Raster files meet the CALS MIL-R-28002A specification.

5. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included in this evaluation.

6. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included in this evaluation.

7. CGM Analysis

No Computer Graphics Metafiles (CGMs) were included in this evaluation.

8. Conclusions and Recommendations

The physical structure, CALS headers, and Document Declaration files of the tape had no valid errors or warnings. This portion of the tape meets the CALS MIL-STD-1840A requirements.

The Raster files meet the CALS MIL-R-28002A specification.

The tape submitted by Lockheed Aeronautical Systems Company meets the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information
ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange
ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sun Aug 14 14:42:20 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set047

Page: 1

File Name	File Type	Record Format/ Length	Block Length/ Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D002	Document Declaration	D/00260	02048/000001	Extracted
<i><<<< PART OF LOG FILE REMOVED HERE >>>></i>				
D029	Document Declaration	D/00260	02048/000001	Extracted
D001R001	Raster	F/00128	02048/000086	Extracted
D001R002	Raster	F/00128	02048/000091	Extracted
<i><<<< PART OF LOG FILE REMOVED HERE >>>></i>				
D028R001	Raster	F/00128	02048/000101	Extracted
D029R001	Raster	F/00128	02048/000042	Extracted

Catalog Process terminated normally.

9.1.1 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)
Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sun Aug 14 14:37:15 1994

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1L00801

3

Label Identifier: VOL1
Volume Identifier: L00801
Volume Accessibility:
Owner Identifier:
Label Standard Version: 3

*** NOTE (ANSI X3.27; 8.3.1.8) - The Label Standard Version
should be 4 to represent the current level of ANSI X3.27.

HDR1D001 L0080100010001000100 94027 95027 000000EDCARS

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: L00801
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0001
Generation Version Number: 00
Creation Date: 94027
Expiration Date: 95027
File Accessibility:
Block Count: 000000
Implementation Identifier: EDCARS

<<<< PART OF LOG FILE REMOVED HERE >>>>

End of Volume L00801

End Of Tape File Set

Tape Import Process terminated with 0 error(s), 0 warning(s), and 1 note(s).

9.1.2 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Sun Aug 14 14:42:21 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set047

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: LASC

srcdocid: 3338432 98897 LG 00020002LMGEHN

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.

*** NOTE - Correction made in new Document Declaration Header File.

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19921104

dstsys: EDCARS, WR-ALC/TILCA

dstdocid: 3338432 98897 LG 00020002LMGEHN

*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.

*** NOTE - Correction made in new Document Declaration Header File.

dstrelid: NONE

dtetrn: 19940127

dvacc: F33657-90-C-0071-P00013-BL2

filcnt: R2

ttlcls: Unclass

doccls: Unclass

doctyp: INSTL DWG

docttl: WAVEGUIDE INSTLLATION LPCR-130-2 RADAR

2 error(s), 0 warning(s), and 2 note(s) were encountered
in Document Declaration File D001.

Found file: D001R001

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: 3338432 98897 LG 00010002LMGEHN

*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.

*** NOTE - Correction made in new Raster Header File.

```
dstdocid: 3338432 98897 LG 00010002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new Raster Header File.
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: Unclass
rtype: 1
rorient: 090,270
rpelcnt: 006848,008800
rdensy: 0200
notes: NONE
```

2 error(s), 0 warning(s), and 2 note(s) were encountered
in Raster File D001R001.

```
Found file: D001R002
Extracting Raster Header Records...
Evaluating Raster Header Records...
```

```
srcdocid: 3338432 98897 LG 00020002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new Raster Header File.
dstdocid: 3338432 98897 LG 00020002LMGEHN
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new Raster Header File.
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: Unclass
rtype: 1
rorient: 090,270
rpelcnt: 006848,008800
rdensy: 0200
notes: NONE
```

2 error(s), 0 warning(s), and 2 note(s) were encountered
in Raster File D001R002.

```
Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.
```

```
Checking file count...
No errors were encountered during file count verification.
File Count verification complete.
```

A total of 6 error(s), 0 warning(s), and 6 note(s) were encountered in Document D001.

Found file: D002
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

```
srcsys: LASC
srcdocid: 3341676      98897          LG 00020002UMGEHN
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.
*** NOTE - Correction made in new Document Declaration Header File.
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19920715
dstsys: EDCARS, WR-ALC/TILCA
dstdocid: 3341676      98897          LG 00020002UMGEHN
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.
*** NOTE - Correction made in new Document Declaration Header File.
dstrelid: NONE
dtetrn: 19940127
dlvacc: F33657-90-C-0071-P00013-BL2
filcnt: R2
ttlcls: Unclass
doccls: Unclass
doctyp: ASSY DWG
docttl: BUS BAR- ESSENTIAL AC BUS, ASSY OF
```

2 error(s), 0 warning(s), and 2 note(s) were encountered in Document Declaration File D002.

<<<< PART OF LOG FILE REMOVED HERE >>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

A total of 4 error(s), 0 warning(s), and 4 note(s) were encountered in Document D029.

A grand total of 218 error(s), 0 warning(s), and 218 note(s) were encountered in this File Set.

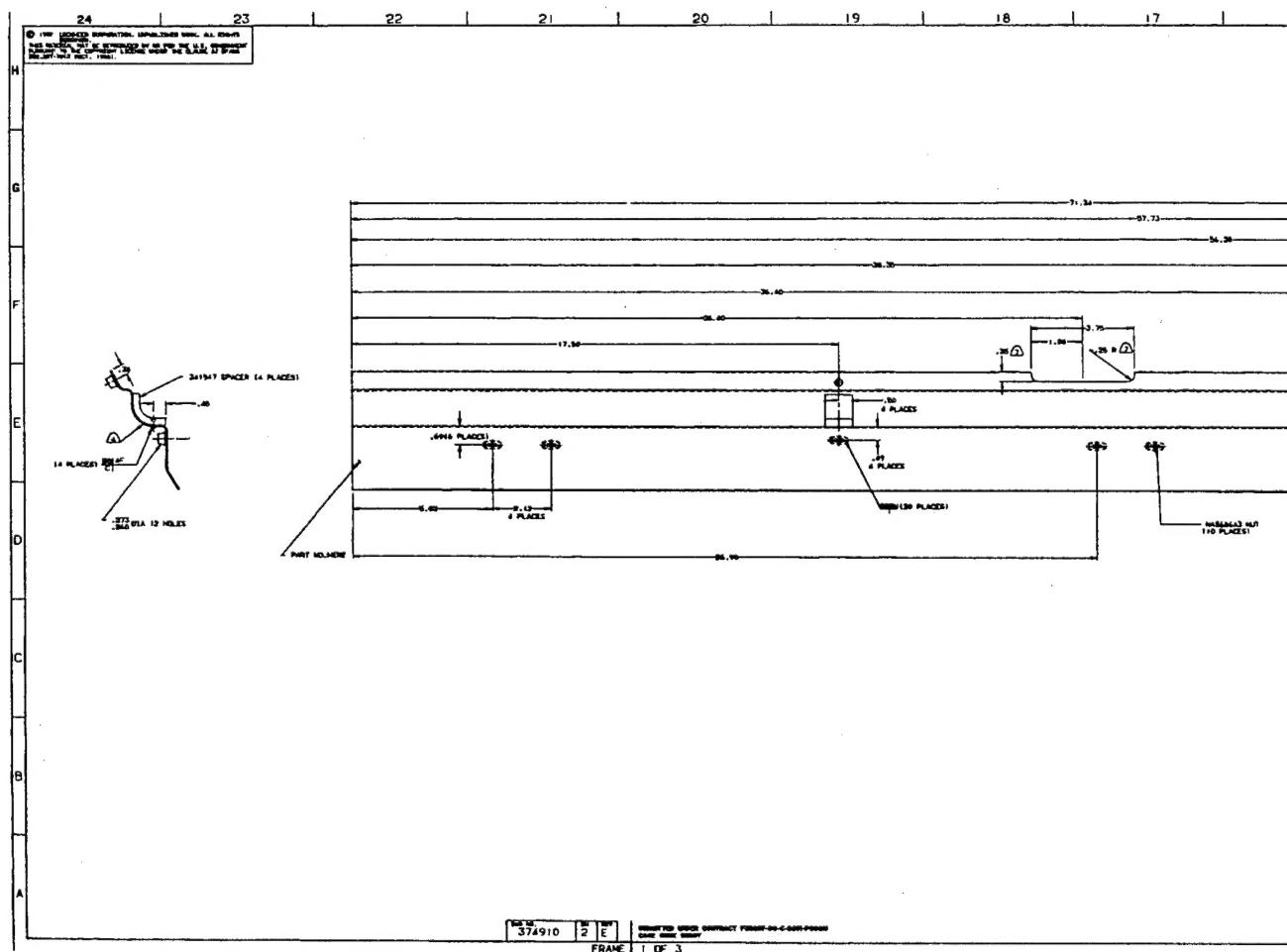
MIL-STD-1840A File Set Evaluation Complete.

9.1.3 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001      ' ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D002      ' ---  
  
      <<<< PART OF LOG FILE REMOVED HERE >>>>  
  
/cals/caps/Bin/read1840A: --- Read declaration file 'D019      ' ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D020      ' ---  
/cals/caps/Bin/read1840A: maximum number of documents (20) exceeded.
```

10. Appendix B - Detailed Raster Analysis

10.1 File D010R001



10.2 File D025R002

8	7	6	5	4	3	2	1
REVISIONS 107 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 559 560 561 562 563 564 565 566 567 568 569 569 570 571 572 573 574 575 576 577 578 579 579 580 581 582 583 584 585 586 587 588 589 589 590 591 592 593 594 595 596 597 598 599 599 600 601 602 603 604 605 606 607 608 609 609 610 611 612 613 614 615 616 617 618 619 619 620 621 622 623 624 625 626 627 628 629 629 630 631 632 633 634 635 636 637 638 639 639 640 641 642 643 644 645 646 647 648 649 649 650 651 652 653 654 655 656 657 658 659 659 660 661 662 663 664 665 666 667 668 669 669 670 671 672 673 674 675 676 677 678 679 679 680 681 682 683 684 685 686 687 688 689 689 690 691 692 693 694 695 696 697 698 699 699 700 701 702 703 704 705 706 707 708 709 709 710 711 712 713 714 715 716 717 718 719 719 720 721 722 723 724 725 726 727 728 729 729 730 731 732 733 734 735 736 737 738 739 739 740 741 742 743 744 745 746 747 748 749 749 750 751 752 753 754 755 756 757 758 759 759 760 761 762 763 764 765 766 767 768 769 769 770 771 772 773 774 775 776 777 778 779 779 780 781 782 783 784 785 786 787 788 789 789 790 791 792 793 794 795 796 797 798 799 799 800 801 802 803 804 805 806 807 808 809 809 810 811 812 813 814 815 816 817 818 819 819 820 821 822 823 824 825 826 827 828 829 829 830 831 832 833 834 835 836 837 838 839 839 840 841 842 843 844 845 846 847 848 849 849 850 851 852 853 854 855 856 857 858 859 859 860 861 862 863 864 865 866 867 868 869 869 870 871 872 873 874 875 876 877 878 879 879 880 881 882 883 884 885 886 887 888 889 889 890 891 892 893 894 895 896 897 898 899 899 900 901 902 903 904 905 906 907 908 909 909 910 911 912 913 914 915 916 917 918 919 919 920 921 922 923 924 925 926 927 928 929 929 930 931 932 933 934 935 936 937 938 939 939 940 941 942 943 944 945 946 947 948 949 949 950 951 952 953 954 955 956 957 958 959 959 960 961 962 963 964 965 966 967 968 969 969 970 971 972 973 974 975 976 977 978 979 979 980 981 982 983 984 985 986 987 988 989 989 990 991 992 993 994 995 996 997 997 998 999 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1089 1090 1091 1092 1093 1094 1095 1096 1097 1097 1098 1099 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1119 1120 1121 1122 1123 1124 1125 1126 1127 1128 1129 1129 1130 1131 1132 1133 1134 1135 1136 1137 1138 1139 1139 1140 1141 1142 1143 1144 1145 1146 1147 1148 1149 1149 1150 1151 1152 1153 1154 1155 1156 1157 1158 1159 1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1179 1180 1181 1182 1183 1184 1185 1186 1187 1188 1189 1189 1190 1191 1192 1193 1194 1195 1195 1196 1197 1198 1198 1199 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1209 1210 1211 1212 1213 1214 1215 1216 1217 1218 1219 1219 1220 1221 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